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08/941,132 09/30/97 TANAKA

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002292 IM62/1121  
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EXAMINER

ZITOMER, E

ART UNIT

PAPER NUMBER

1713

DATE MAILED:

11/21/00

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UNITED STATES DEPARTMENT OF COMMERCE  
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Washington, D.C. 20231

**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Paper No. 33

Application Number: 08/941,132  
Filing Date: September 30, 1997  
Appellant(s): Yasuyuki Tanaka et al.

**MAILED**

**NOV 21 2000**

**GROUP 1700**

John W. Bailey  
For Appellant

**EXAMINER'S ANSWER**

This is in response to appellant's brief on appeal filed September 7, 2000.

**(1) *Real Party in Interest***

A statement identifying the real party in interest is contained in the brief.

**(2) *Related Appeals and Interferences***

Art Unit: 1713

A statement that there are no related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

**(3) *Status of Claims***

The statement of the status of the claims contained in the brief is correct.

**(4) *Status of Amendments After Final***

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) *Summary of Invention***

The summary of invention contained in the brief is correct.

**(6) *Issues***

The appellant's statement of the issues in the brief is correct.

**(7) *Grouping of Claims***

Appellant's brief includes a statement that claims 9-19 do not stand or fall together and provides reasons as set forth in 37 CFR 1.192(c)(7) and (c)(8).

**(8) *Claims Appealed***

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(9) *Prior Art of Record***

The following is a listing of the prior art of record relied upon in the rejection of claims under appeal.

Art Unit: 1713

|                    |          |        |
|--------------------|----------|--------|
| 0 584 597 A1 (EPA) | YASUYUKI | 3-1994 |
| 4,208,490          | KONDO    | 6-1980 |
| 5,118,546          | BURLETT  | 6-1992 |
| 4,528,340          | HAYASHI  | 7-1985 |

**(10) Grounds of Rejection**

The following grounds of rejection are applicable to the appealed claims:

Claims 9-19 are rejected under 35 U.S.C. § 103 as being unpatentable over Yasuyuki et al., EP 0 584 597, taken with Kondo et al., US 4,208,490, or Burlett et al., US 5,118,546, or Hayashi et al., US 4,528,340.

The claimed invention relates to grafting or epoxidizing natural rubber which has been deproteinized. The individual procedures for grafting, epoxidizing and deproteinizing rubber and the advantages of each are generally known and the present coupling of procedures is deemed obvious for the additive effect. More directly, Yasuyuki teaches deproteinizing natural rubber (measured as weight percent nitrogen) to nitrogen levels below 0.02% by weight to remove allergens and enhance physical properties [page 2, line 11 - page 3, line 11; page 10, Table 1, Example 1; claim 2,]. “By almost completely eliminating non-rubber components, an advantageous material for producing rubber products which suffer from little energy loss and have excellent mechanical properties, improved crepe characteristics and improved aging resistance, can be provided.” [page 3, lines 3-6]. The deproteinized rubber also possesses excellent processing and mechanical characteristics [page 24, lines 1-27]. Kondo teaches enhancing the

Art Unit: 1713

physical properties and appearance of natural rubber by grafting with the instant monomers [column 2, line 61 - column 3, line 49; column 4, lines 24-28]. There is no limitation on the proportion of rubber to grafted monomer, however, a 3-60 % range of rubber content by weight is preferred [column 3, lines 30-34] which appears to fall within the present graft ratio range of 26.5-36.7 [paragraph bridging pages 11 and 12 of appellant's disclosure]. It is generally known in the art to epoxidize rubber to enhance properties such as hydrophilicity. Hayashi e.g. teaches epoxidizing rubber in the range of 5-60% [column 3, lines 3-25] while Burlett teaches epoxidizing rubber in the range of 15-85% [column 2, lines 5-17] which falls within the range set forth by appellants at page 13, last paragraph, of the disclosure. Kondo or Hayashi or Burlett differs from the claimed invention by not disclosing deproteinized rubber.

It would have been obvious to deproteinize rubber before grafting or epoxidizing in the expectation of reducing allergens in the resultant products while enhancing physical and mechanical properties during and after processing because Yasuyuki teaches the embodiment for the same kinds of rubbers used by Kondo or Hayashi or Burlett. Stated otherwise, it would have been obvious to graft or epoxidize the rubbers of Yasuyuki in the expectation of enhancing physical properties, mechanical properties, aging, appearance and/or hydrophilicity because Kondo or Hayashi or Burlett teaches the embodiments for the same kinds of rubbers disclosed by Yasuyuki.

**(11) Response to Argument**

Art Unit: 1713

Applicant's arguments filed in the brief have been fully considered but they are not persuasive. The basis of said arguments is that unexpected results in the way of improved grafting and epoxidation efficiencies have been obtained by using deproteinized rubber. This is not compelling for at least the following reasons:

- it is not clear what the unexpected results are. While appellant's results in Tables I and II of the disclosure and the Miyamoto Declaration show that grafting and epoxidation ratios are affected by protein content, the actual levels of grafting and epoxidation attained have not been shown to exceed those of the secondary references as stated above. Clearly, it is within the skill of the art to achieve the efficiencies of grafting and epoxidation now being claimed. This point has been made throughout prosecution and has not been disputed by appellant [see e.g. Paper No. 16, page 3, last paragraph et seq.].

- the assertion that one of ordinary skill in the art would not expect deproteinization to enhance grafting or epoxidation is a conclusory statement unsupported with factual evidence and entitled to little weight. Of pertinence here is that nothing on this record relates to earlier work on the direct effect(s) of deproteinization on either procedure.

- assuming *arguendo* that unexpected results have been obtained the argument is not compelling because obviousness does not require a showing of motivation different from known art. In this regard it is well settled that;

- unexpected results do not outweigh expected results, and the discovery that a claimed composition possesses a property not disclosed by the prior art does not alone

Art Unit: 1713

defeat a *prima facie* case. *In re Nolan*, 193 USPQ 641 (CCPA 1977); *In re Dillon*, 16 USPQ2d 1897. In the present case unexpected enhancements in grafting and epoxidation do not outweigh expected enhancements in physical and allergenic properties.

- the discovery of another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985). In the present case one of ordinary skill in the art using the deproteinization of Yasuyuki would inherently realize the enhancements in epoxidation and grafting now being claimed, i.e. said enhancements would flow naturally from following the suggestion of Yasuyuki to deproteinize the rubber.

- the assertion that Yasuyuki teaches away from the present invention because the proteins are broken down to polypeptides is not understood. The reference clearly teaches enhancements in properties as a function of lower protein measured as total nitrogen, and nothing on the record shows an affect due to nitrogen distribution, i.e. the form of the nitrogen. Further, it is not clear what difference, if any, the form the nitrogen takes prior to removal has on the claimed invention.

Art Unit: 1713

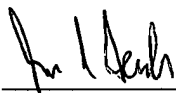
For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,




FRED ZITOMER, PhD  
PRIMARY EXAMINER  
ART UNIT 1713

**CONFEREES:**



James Seidleck, SPE AU 1711



David Wu, SPE AU 1713